



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

NG

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,775	02/20/2002	Shigeto Taga	36856.615	3648

7590 11/21/2002

Keating & Bennett LLP
10400 Eaton Place, Suite 312
Fairfax, VA 22030

EXAMINER

ADDISON, KAREN B

ART UNIT	PAPER NUMBER
----------	--------------

2834

DATE MAILED: 11/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/077,775

Applicant(s)

TAGA, SHIGETO

Examiner

Karen B Addison

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4,6-14 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiyoma (EP0840369).

Chiyoma discloses in fig. 19-21 a surface acoustic wave device comprising: a package (3) made of alumina ceramic and a plurality of metal bumps (au or solder page 18 line 19-26) disposed near any for corners of the bonding surface (101). Wherein, the rectangular shape piezoelectric substrate 100 (lithium tantalite page 83 line 6-7) has different linear thermal expansion coefficients located in two different directions of the bonding surface of the piezoelectric substrate; on which the plurality of metal bumps are provided. Wherein, maximum distance (L2) between the metal bumps arranged in one of the two different directions (in which the piezoelectric substrate and the package have a greater difference between the linear thermal expansion coefficients) is less than the maximum distance (L1) between the metal bumps arrange in the other direction (in which the piezoelectric substrate and the package have a smaller difference between the linear thermal expansion coefficients).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiyoma in view of Yoshinori(0991185).

Chiyome substantially disclose the claim invention. However, Chiyome do not disclose at least three of the metal bumps dispose near any for corners of the bonding surface and at least one of the metal bumps disposed in the approximate center of the bonding surface of the piezoelectric substrate.

Yosinori discloses in fig.1 a surface acoustic wave device comprising: a piezoelectric substrate (K1) comprising at least three metal bumps10 disposed near any for corners of the bonding surface (B1) and at least one metal bump disposed in the approximate center of the bonding surface of the piezoelectric substrate for the purpose of eliminating the reflection from temperature stress generated by reflowing (for soldering the bumps and temperature cycle changes due to environmental changes). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the surface acoustic device of Chiyom with the teaching of Yoshinori surface acoustic wave device having bumps for the purpose of reducing the influence of

Art Unit: 2834

stress based on the difference of the coefficients of thermal expansion between the surface acoustic wave device and substrate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen B Addison whose telephone number is 703-306-5855. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1317. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

KBA
November 15, 2002

Thomas M. Dougherty
THOMAS M. DOUGHERTY
PRIMARY EXAMINER
GROUP 2100
28/10